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Key Environmental Issues for the 1990s and beyond in Canada

Roderick M. McLeod

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*Roderick M. McLeod, Q.C.**

I. JURISDICTION OVER THE ENVIRONMENT

The Canadian Constitution lists forty-five jurisdictional powers for division between the federal and provincial governments.[1] The enumerated powers which provide the basis for the federal government's jurisdiction over environmental matters include jurisdiction over sea coast and inland fisheries, navigation and shipping, interprovincial works and undertakings, criminal law, trade and commerce and the general peace, order and good government power. The federal government also has jurisdiction over treaties, which provides the basis for the international protocols and agreements entered into on behalf of Canada.[2]

Provincial ownership of their own natural resources gives the provinces a wide range of jurisdiction to protect the quality of these resources. Also, the provincial responsibility for local works and undertakings and municipal institutions allows the province to regulate such activities as sewage and waste disposal. In addition, provincial power to impose fines or imprisonment in enforcing laws made within provincial jurisdiction permits it to set up a broad range of regulatory controls.

Two important limitations on the provincial jurisdiction over environmental matters are that, as a general rule, provincial jurisdiction does not extend to federal works and undertakings or extend to enacting legislation with an extra-provincial effect.

Some of the provincial powers in the area of environmental law overlap to a certain extent with federal legislation. In such a case, the paramountcy doctrine holds that federal legislation prevails over provincial legislation in cases where each law has a jurisdictional basis and where a conflict between the two pieces of legislation exists.

II. CLIMATE AND ATMOSPHERIC POLLUTION

Climate and atmospheric pollution has been identified by the United

* Partner, Miller Thomson (Toronto and Markham, Ontario).

This paper has been prepared with the assistance of Derek J. Ferris (Associate, Miller Thomson) and Allan P. Webster (Associate, Miller Thomson).

This paper is designed to be a broad, regulatory review of environmental issues in Canada. This paper does not express the opinions of the authors regarding the issues set forth herein and is intended only to be used as a broad instruction to current and future issues in environmental law.

[1] Constitution Act, 1867, Victoria, ch. 3, §§ 91-92 (1867) (U.K.).

[2] *Id.* at § 132.

Nations Environment Program as one of its six environmental priority areas. Some of the issues relating to climate and atmospheric pollution include global warming, ozone depletion, acid rain and ground level ozone. All are environmental concerns which know no national boundaries. The potential for transboundary effects of these problems results in the need for international cooperation and agreements to address these problems. At the same time, it must be remembered that global solutions are dependent on local action and initiatives for their success. The common environmental expression for this view is "think globally, act locally".

A. Global Warming

Global warming, also known as the greenhouse effect, is a complex problem resulting from an increase in the concentration of atmospheric gases such as carbon dioxide, methane, nitrogen oxide, ozone and chlorofluorocarbons, collectively known as greenhouse gases. The increased atmospheric concentration of these gases has resulted largely from the increased burning of fossil fuels as an energy source. Recent climate models have predicted an increase in the Earth's average temperature of between 1.5 and 4.5 degrees Celsius by the year 2050.[3] This increase in temperature will result in problems such as coastal flooding, a lowering in Great Lake levels, changes in rainfall and weather patterns, a shortening in the length of the winter season and problems related to soil erosion due to moisture loss and reduced crop yields in some areas of the country.[4]

In Canada, the House of Commons Standing Committee on the Environment released its third report on global warming entitled *Out of Balance: The Risk of Irreversible Climate Change* in April 1991. Some of the twenty-five recommendations made in this report include immediate action to substantially reduce the rate of greenhouse gas emissions in Canada, immediate implementation of a national program aimed at measuring and identifying sources of greenhouse gas emissions and adopting the target of a twenty percent reduction in human source carbon dioxide emissions by the year 2005.[5]

The federal government and several provinces have published reports dealing with the implication of climate changes in various areas of Canada.[6] The present policy and initiatives of the Canadian Federal

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[3] CCH CANADA LIMITED, CANADIAN ENVIRONMENTAL CONTROL NEWSLETTER 3350 (1990).

[4] CANADA, HOUSE OF COMMONS, STANDING COMMITTEE ON THE ENVIRONMENT, OUT OF BALANCE: THE RISKS OF IRREVERSIBLE CLIMATE CHANGE 4, 8 (1991) [hereinafter OUT OF BALANCE].

[5] *Id.* at 2.

[6] *See, e.g.*, DR. BHAWAN SINGH, ENVIRONMENT CANADA, THE IMPLICATIONS OF CLIMATE CHANGE FOR QUEBEC (1990); ALBERTA RESEARCH COUNCIL, DEPARTMENT OF AGRICULTURE, TOWARDS A STRATEGY FOR ADOPTING TO CLIMATE CHANGE IN ALBERTA (1989).

Government on global warming are outlined in Canada's Green Plan[7] (the "Green Plan"). The Green Plan is the federal government's five year environmental plan, which was released on December 11, 1990. The three point strategy outlined in the Green Plan to deal with global warming includes proposals to limit the net emissions of greenhouse gases, research and modelling aimed at preparing for global warming and initiatives aimed at improving our understanding of global warming.

While these proposals are all welcome, it must be remembered that only two percent of the world's greenhouse gases are produced in Canada.[8] Global problems demand global solutions, and therefore, international agreements reducing the emission of greenhouse gases, particularly carbon dioxide, must be achieved in the near future. In addition, provincial programs aimed at promoting alternative energy sources, promoting improved energy efficiency, implementing carbon taxes, setting new fuel efficiency targets for new vehicles and encouraging public transit will also have to be examined as means of reducing emissions of greenhouse gases.

Given the potential consequences of global warming, governments cannot take a "wait and see" approach, but must act immediately to address these problems.

B. Stratospheric Ozone Depletion

The ozone layer in the Earth's stratosphere filters harmful ultraviolet radiation and prevents it from reaching the Earth's surface. This stratospheric ozone layer is currently being depleted by chlorofluorocarbons ("CFCs") and halons. CFCs are used in the manufacture of refrigerants, styrofoam, computer chips and other products. The dramatic effect that CFCs have on stratospheric ozone is demonstrated by the ability of one molecule of CFC to destroy tens of thousands of ozone molecules.

Canada has had a CFC regulation in place since 1980,[9] and is also a signatory to the Montreal Protocol on Substances that Deplete the Ozone Layer[10] ("Montreal Protocol"), which Canada ratified on June 30, 1988. Under the Montreal Protocol, all contracting states are required to stabilize production of CFCs at these 1986 levels by August 1, 1989, and are required to reduce the production and consumption of CFCs to eighty percent of their 1986 levels by June 30, 1994. On June 28, 1990, Canada ratified amendments to the Montreal Protocol which called for the total phase-out of some CFCs by the year 2000 and the phase out of other major ozone-depleting substances by the year 2005.

In 1990, the House of Commons Standing Committee on the Envi-

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[7] ENVIRONMENT CANADA, CANADA'S GREEN PLAN (1990) [hereinafter CANADA'S GREEN PLAN].

[8] OUT OF BALANCE, *supra* note 4, at 13.

[9] Chlorofluorocarbon Regulations, S.O.R./80-254 (1980) (Can.).

[10] CANADIAN ENVIRONMENTAL CONTROL NEWSLETTER, *supra* note 3, at 3041.

ronment tabled its report entitled *Deadly Releases: CFCs*.[11] This report recommended the establishment of a CFC recycling industry to deal with existing CFC sources. Canada has also passed three regulations under the Canada Environmental Protection Act[12] ("CEPA") to deal with chlorofluorocarbons[13], bromofluorocarbons[14] and CFC products[15]. These regulations apply to the import, export and manufacture of CFCs in Canada and reduce the use of CFCs to the levels called for in the Montreal Protocol.

Several provinces have also introduced legislation dealing with ozone-depleting substances. Ontario's CFC regulations include a ban not only on CFCs, but also on the use of CFCs in packaging materials.[16]

The Green Plan calls for a new federal program for the conservation, recovery and recycling of CFCs, halons and other ozone-depleting substances and for continued research to verify the effectiveness of the CFC controls already in place. To this end, the Canadian Government has recently committed $8 million dollars to an arctic observatory for the monitoring of gases in the arctic stratosphere.[17]

The Montreal Protocol, at least insofar as Canada is concerned, illustrates a trend toward developing international agreements to deal with global environmental problems followed by the development of domestic regulations to put such goals in place. In the 1990s, continued international agreements with complementary domestic regulations dealing with other ozone-depleting substances such as methyl chloroform and carbon tetrachloride must be pursued. In addition, research into non-polluting alternatives to CFCs must be encouraged and shared among all countries.

Support to assist developing countries, such as that provided by the Montreal Protocol Multilateral Fund, must also continue to ensure that all countries are able to comply with the CFC targets set in the Montreal Protocol.

C. *Acid Rain*

Acid rain is an environmental problem which is expected to become less prevalent in Canada during the 1990s.[18] For example, since 1985,

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[11] CANADA, HOUSE OF COMMONS, STANDING COMMITTEE ON THE ENVIRONMENT, DEADLY RELEASES: CFCs (1991).

[12] S.C., ch. 22 (1988) (Can.), *as amended* [hereinafter CEPA].

[13] Chlorofluorocarbon Regulations, 1989, S.O.R./90-127 (1990) (Can.); Ozone-depleting Substances Regulations No. 1 (Chlorofluorocarbon), S.O.R./89-351 (1989) (Can.).

[14] Ozone-depleting Substances Regulations No. 2 (Certain Bromofluorocarbons), S.O.R./90-583 (1990) (Can.).

[15] Ozone-depleting Substances Regulations No. 3 (Products), S.O.R./90-584 (1990) (Can.).

[16] Ozone Depleting Substances - General, O. Reg. 394/89 (1989) (Ont.), passed under the Environmental Protection Act, R.S.O., ch. 141 (1980) (Ont.), *as amended*.

[17] CANADIAN ENVIRONMENTAL CONTROL NEWSLETTER, *supra* note 3, at 3665.

[18] CANADA'S GREEN PLAN, *supra* note 7, at 120.

sulphur dioxide emissions in Canada have been reduced by forty percent from 1980 emission levels as a result of acid rain programs in place in Canada and the United States.[19]

On March 13, 1991, Canada and the United States signed an air quality accord dealing with transboundary pollution.[20] The accord provides reductions on each country's sulphur dioxide emissions and also sets out reductions for each country's nitrogen oxide emissions. In addition, some provinces have their own acid rain programs in place.

The Green Plan commits $30 million to Canada's acid rain control program to implement and verify Canada's reductions in sulphur dioxide emissions set out in the air quality accord. During the 1990s, the federal government will also have to reach agreements with all the provinces to ensure that the permanent Canadian emissions cap set out in the air quality accord — 3.2 million tons of sulphur dioxide by the year 2000 — is reached and distributed among the provinces.

D. Ground Level Ozone

Ground level ozone, also known as photochemical smog, is one of the main components of smog and represents a serious air pollutant. It is formed when nitrogen oxides ("NO_Xs") and volatile organic compounds ("VOCs") react with sunlight. Sources of VOCs include motor vehicles, vapors from chemical plants and vapors released from gas stations. Two of the major sources of NO_Xs are motor vehicles and power plants. High ground level ozone levels result in serious breathing impairment and also cause damage to crops and forests.[21] In fact, damage to Ontario crops from ground level ozone was estimated at CAN$80 million for 1990. Canada's maximum acceptable level for ground level ozone is currently eighty-two parts per billion.

In Canada, the federal government has recently announced that it will begin ground level ozone advisories in major urban centers in 1992. The Canadian Council of Ministers of the Environment has also commenced a comprehensive abatement plan for NO_Xs and VOCs. This management plan sets out fifty-eight control initiatives for the control of NO_Xs and VOCs. Twenty-six of these initiatives are currently underway and include programs such as public education campaigns, new source emission guidelines for combustion turbines and studies of the transboundary flow of NO_X, VOCs and ozone.[22]

Internationally, Canada signed the International Protocol Concerning the Control of Emissions of Nitrogen Oxides or Their Transboundary

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[19] CANADIAN ENVIRONMENTAL CONTROL NEWSLETTER, *supra* note 3, at 3700.

[20] Canada-United States Agreement on Air Quality, Mar. 13, 1991, 30 I.L.M. 676.

[21] CLIFFORD MAYNES, *Air Quality, in* SUSTAINABILITY AS IF WE MEAN IT: AN ACTION AGENDA PREPARED BY ONTARIO'S CITIZENS GROUP AND ENVIRONMENTAL ORGANIZATIONS 25 (1991).

[22] Letter from Bernard Madé, Manager, NO_X/VOC Office, CCME (Jan. 27, 1992).

Fluxes in 1989.[23] Parties to this Protocol are required to take measures to control and/or reduce their annual national emission of nitrogen oxides at their 1987 levels by December 31, 1994. In addition, the air quality accord signed between Canada and the United States on March 13, 1991, sets out national reductions in the emissions of NO_Xs over the next ten years for stationary and mobile sources.

In 1991, Canada signed an international protocol to reduce by 1999 levels of VOCs by thirty percent in areas with high levels of ground level ozone and in designated locations that affect air quality in other countries. Two such designated locations in Canada are the Lower Fraser Valley in British Columbia and the Windsor to Quebec City corridor.[24]

At the provincial level, at least two provinces have enacted legislation requiring a reduction in the vapor pressure for gasoline sold in the province during the summer months.[25] These regulations are designed to reduce the levels of VOCs which in turn reduce ground level ozone levels.

Given the transboundary contributions to ground level ozone levels, it is essential that these problems continue to be addressed at the international level. At the same time, the problem of ground level ozone is common to all major urban centers and as such, local initiatives encouraging increased public transit and car pooling have an important role to play in solving this problem.

The Green Plan sets 1994 as the date for adopting tighter emission standards for new automobiles and other transportation sources. The Green Plan also calls for an "emission trading program" to be set up in conjunction with the provinces whereby NO_X and VOC permits would be issued to companies consistent with the overall emission targets to be achieved. The program would allow companies to buy and sell these emission permits, thereby providing an economic benefit to those companies that can reduce their emissions quicker while penalizing those companies that are slow to improve their emission rates.[26] The emission trading program is discussed in Section VII, *infra*.

III. WATER ISSUES

A. Water Sharing and Jurisdiction

The transport or shipping of Canadian water to the United States

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[23] Protocol to the 1979 Convention on Long Range Transboundary Air Pollution Concerning the Control of Emissions of Nitrogen Oxides or Their Transboundary Fluxes, United Nations Economic Commission for Europe (Oct. 31, 1988), ECE/EB.AIR/21.

[24] CANADIAN ENVIRONMENTAL CONTROL NEWSLETTER, *supra* note 3, at 3710.

[25] Nova Scotia Gasoline Volatility Regulations, N.S. Reg. 120/90 (1990) (N.S.), passed under the Environmental Protection Act, R.S.N.S., ch. 150 (1989) (N.S.), *as amended*; Gasoline Volatility, O. Reg. 389/89 (1989) (Ont.) (in force July 1, 1989 to Sept. 1, 1989), passed under the Environmental Protection Act, R.S.O., ch. 141 (1980) (Ont.), *as amended*.

[26] CANADA'S GREEN PLAN, *supra* note 7, at 54.

and a possible claim by the United States that access to Canadian water is part of the general access to Canadian resources under the Canada-U.S. Free Trade Agreement[27] may also become an environmental issue in the 1990s as the demand for fresh water increases.

In Canada, one of the major environmental issues for the 1990s may involve the issue of which level of government has jurisdiction over water quality in a particular situation. Attached as Schedule 1 to this paper is a list of federal and Ontario legislation and guidelines dealing with water quality. This schedule demonstrates in part the potential for overlap in the federal and provincial regulation of water.

B. Great Lakes Pollution

The Great Lakes represent the world's largest reservoir of fresh water with approximately eight million Canadians and twenty-eight million Americans living within its drainage basin.[28]

In 1991, several federal government departments released a joint report entitled *Toxic Chemicals in the Great Lakes and Associated Effects*.[29] The report found that levels of contaminants in fish and birds had decreased substantially since the 1970s but that water quality testing in certain Great Lakes' harbors and bays indicated that concentrations of toxic chemicals exceeded limits set out in the Canada-U.S. Great Lakes Water Quality Agreement ("GLWQA").[30]

The International Joint Commission ("IJC") is the binational organization established by the Boundary Waters Treaty of 1909 to deal with the shared water resources between Canada and the United States. The IJC investigates specific issues when requested by the Canadian and United States Governments and issues recommendations. It may also have matters referred to it for binding decision, but to date, this provision has not been used.

The GLWQA, as amended by a 1987 protocol, sets out a number of programs to be implemented with provincial and state governments and also sets specific objectives for organic and inorganic substances discharged into the Great Lakes. The renewed agreement addresses the problems of contaminated sediments, provides for research, monitoring and control of pollutants entering the Great Lakes and calls for specific abatement plans for non-point urban and rural pollution sources.

At the provincial level, the Ontario Government's municipal industrial strategy for abatement ("MISA") was set up in 1986. The goal of

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27 Canada-United States Free Trade Agreement, Dec. 22, 1987, and Jan. 2, 1988, H.R. Doc. No. 216, 100th Cong., 2d Sess. 297 (1988), *reprinted in* 27 I.L.M. 281, C.T.S. 1989/3 (entered into force January 1, 1989).

28 ENVIRONMENT CANADA, TOXIC CHEMICALS IN THE GREAT LAKES AND ASSOCIATED EFFECTS 3 (1991).

29 *Id.*

30 CANADIAN ENVIRONMENTAL CONTROL NEWSLETTER, *supra* note 3, at 3576.

the MISA program is to eliminate toxic contaminants in municipal and industrial discharges entering Ontario's waterways. Under the MISA program, effluent monitoring regulations have been created under the Environmental Protection Act,[31] ("EPA") and specific effluent limit regulations are now being developed for each of the nine industrial sectors and the municipal sector. These limit regulations will be developed by considering the best available technology economically achievable ("BATEA") for each of the sectors. Once these regulations are developed, the MISA program will require corporations to carry out water quality assessments of their effluents and the general prohibitions against water pollution found in the Ontario Water Resources Act,[32] and the EPA will apply to the limits set in these effluent regulations. Abatement programs such as MISA, which represent an increased regulation of the industrial sector, have been and will undoubtedly continue to be the trend in the 1990s as pollution sources are identified and then regulated.

The Green Plan calls for bilateral action with the United States for comprehensive pollution prevention programs regarding the Great Lakes.[33] The mechanism for such programs would likely be further amendments to the GLWQA. In the 1990s, Canada, the United States and all the states and provinces which discharge directly or indirectly into the Great Lakes basin must establish mandated targets aimed at eventually achieving a zero discharge for toxic substances into the Great Lakes, if they have not done so already. Continued regulation, as evidenced by the MISA program, will have to continue at all levels of government to ensure compliance with the current objectives as well as any new objectives set out in the GLWQA.

C. Protecting Our Oceans

Canada's two major pieces of legislation governing ocean pollution are contained in Part III of CEPA (formerly the Ocean Dumping Act) and the Fisheries Act.[34] Part VI of CEPA also implements Canada's international obligations under the London Dumping Convention aimed at regulating the dumping of waste at sea. In 1985, Canada also assisted in developing the Montreal Guidelines for the Protection of the Marine Environment Against Land-Based Sources of Pollution.[35] Land-based sources[36] contribute up to eighty percent of marine pollution and, therefore, will have to be regulated by international agreement in the near future.

The federal government has also recently announced the Pulp and

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31 R.S.O., ch. E.19 (1990) (Ont.), *as amended* [hereinafter EPA].

32 R.S.O., ch. O.40 (1990) (Ont.), *as amended.*

33 CANADA'S GREEN PLAN, *supra* note 7, at 37.

34 R.S.C., ch. F-14 (1985) (Can.), *as amended.*

35 CANADA'S GREEN PLAN, *supra* note 7, at 40-41.

36 *Id.* at 40.

Paper Regulatory Package, which consists of new dioxin and furan effluent regulations passed under CEPA as well as amendments to the Fisheries Act regulations which introduce tighter limits for the total suspended solids and the biological oxygen demand level of pulp and paper mill effluent. This increased regulation of the pulp and paper industry will also assist in protecting the oceans and all inland waters into which pulp and paper effluent is currently discharged.

The Green Plan calls for a new Canada Oceans Act to ensure protection of the marine environment in accordance with international law and to allow for the designation of protected coastal areas.

During the 1990s, it will be necessary for the federal and provincial government to continue regulating the discharge of toxic contaminants from the industrial and municipal sectors with abatement programs such as Ontario's MISA program and with additional regulations passed under CEPA.

IV. WASTE MANAGEMENT

A current issue of concern is the management of waste, both industrial and domestic. Many landfill sites in Ontario have become or soon will become full. This has led to greater shipping of waste and cross-border shipping of waste.

Waste management is solely within the sphere of the provincial governments. The federal government only becomes involved in waste management when the substances are "toxic" or possibly when waste is imported into or exported out of Canada.

The relevant legislation for waste management in Ontario is the Environmental Assessment Act[37] ("EAA") and the EPA. The EAA requires environmental planning prior to engaging in some waste management activities. The EPA requires that all waste management facilities be approved prior to operation.

The EAA applies to undertakings of the provincial or municipal government. The EAA also applies to designated major business or commercial undertakings.[38] "Major" business is not defined in the EAA. These undertakings have to submit an environmental assessment to the Minister. An environmental assessment is meant to be a means by which it can be shown that a proposed undertaking is environmentally effective.

The Minister may, if she determines that the undertaking warrants further examination, order an environmental hearing of the undertaking by the Environmental Assessment Board.[39] These hearings are open to parties other than the applicant and can be extremely lengthy and expensive.

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[37] R.S.O., ch. E.18 (1990) (Ont.), *as amended* [hereinafter EAA].

[38] *Id.* at § 3.

[39] *Id.* at § 12.

The EPA requires the proponent of a waste management facility to obtain a certificate of approval prior to commencing operation.[40] Depending on the nature and size of a society, the decision on whether to issue a certificate of approval is made either by the Director or by the Environmental Assessment Board following a hearing. In some cases, the hearing is mandatory, such as when the application is for the disposal of hazardous or liquid industrial waste.[41] In instances where a hearing is not mandatory, the Director has the discretion to send the application to the Board for a hearing and decision.[42]

The EPA also gives the Director the authority to order the owner, the previous owner, or a person who has charge or control of the land to remove the waste and to restore the site.[43] The Director may also order the owner of a site which is not in conformity with the EPA to take the necessary action to achieve compliance.[44]

Land which has been used for a waste disposal site cannot be used for anything else for twenty-five years after the site was last used without the approval of the Minister.[45]

Failure to comply with the EPA may also result in a prosecution being commenced.

A. Reduce, Reuse and Recycle

The federal and provincial governments have announced the intention to cut waste by fifty percent by the year 2000. This will require greater recycling and the reduction in the total volume of waste. In order to meet this goal the federal government will, in addition to promoting the "three R's" (i.e., reduce, reuse and recycle), establish packaging standards in the event that the National Packaging Protocol is not voluntarily met by business, support technological advances in the utilization of waste and enhance the National Waste Exchange Program to improve the market for the large volumes of recyclable material.[46]

B. Assessing More Activities

The New Democratic Party, the provincial party presently in power in Ontario, has announced as part of its election platform an intention to have environmental assessments apply to more undertakings.[47] Under this platform, business undertakings would be subject to assessment if the projected cost of the undertaking exceeds $3.5 million. While no draft

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[40] *Id.* at § 27.
[41] *Id.* at § 32.
[42] *Id.* at § 30.
[43] *Id.* at § 43.
[44] *Id.* at § 44.
[45] *Id.* at § 46.
[46] CANADA'S GREEN PLAN, *supra* note 7, at 58.
[47] THE NEW DEMOCRATIC PARTY OF ONTARIO, GREENING THE PARTY, GREENING THE PROVINCE: A VISION FOR THE ONTARIO NDP CAUCUS 5 (1990).

legislation has been put forward to carry through this election proposal, it is an area of interest that is being monitored.

C. Dangerous Waste

The transportation of dangerous industrial waste is regulated federally by the Transportation of Dangerous Goods Act[48], and provincially by the Dangerous Goods Transportation Act[49]. The EPA, and Regulation 309 thereunder, also apply to liquid industrial and hazardous waste.

Both the federal and provincial governments have initiated a scheme by which dangerous goods are properly labelled and manifested. The first step in the schemes are to properly identify the product. Once it has been identified, there are certain conditions which have to be met whenever the goods are handled. The Transportation of Dangerous Goods Act requires, for example, that all persons who are going to handle the goods be trained or be directly under the supervision of a person who has been trained in the safe handling of these goods.[50]

Currently, the regulations of the United States and Canada relating to shipping are largely the same. Such shipments are bound by the terms of a treaty, effective November 8, 1986, which requires thirty days prior notice to the receiving country.[51]

The federal government has announced the intention of creating mobile waste incinerators for PCB destruction.[52] There has also been announced an intention to place stricter requirements on the training of all personnel involved with the handling of dangerous wastes to protect against possible spills. High risk contaminated sites will also be treated and restored in the next five years. Dangerous waste transportation may cease to continue to move freely across the borders of our two countries, unless "Spills Bonds" are in place to ensure that the receiving country is not financially harmed by a spill.[53]

D. Deep Space Disposal

As the space program becomes more and more efficient and less costly, some hazardous waste, such as spent nuclear fuel, may soon be rocketed into outer space as a safe means of disposal. This means of disposal is even more relevant at a time of nuclear disarmament.

V. ENVIRONMENTAL LIABILITY

The current model for environmental liability is a "quasi-criminal"

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48 R.S.C., ch. T-19 (1985) (Can.).

49 R.S.O., ch. D-1 (1990) (Ont.).

50 Transportation of Dangerous Goods Act, R.S.C., ch. T-19, § 4 (1990) (Can.).

51 Transportation of Dangerous Goods Regulations, SOR/85-77, § 4.2 (1985) (Can.).

52 CANADA'S GREEN PLAN, *supra* note 7, at 59.

53 *Id.* at 60.

model. A polluter is faced with a prosecution by the government. Upon being found guilty, the polluter may face large fines.

The enforcement of CEPA, the EPA and other environmental statutes follows similar procedures. A spill occurs. The person who spills the contaminant then has an obligation to notify the appropriate authority, advise it of the spill and take whatever emergency measures are considered necessary.[54] The regulatory agency then investigates the spill and initiates a prosecution where it considers one appropriate.[55] The investigating authorities have the power to obtain search warrants and seize information.[56]

Using the EPA as an example, after a conviction has been obtained, the person who caused the discharge is liable on first conviction to a fine of up to $10,000 for each day of the offence. On a second or subsequent conviction, the person who causes the spill is liable for a fine of up to $25,000 for each day of the offence. Corporations are subject to higher fines of $50,000 and 100,000 respectively.[57]

If the contaminant causes or is likely to cause harm to the environment, plant life, animal life or human life, or interfere with the normal conduct of business, the person who causes the spill may receive up to one year of imprisonment in addition to the fines mentioned above.[58] The fines for corporations when the substance is harmful are increased to $200,000 for first offenses and $400,000 for second offenses.[59]

In addition to ordering fines, the courts in Ontario may order that the person who caused the spill compensate anyone who has suffered damage as a result of the spill.[60] The court may also order that the person restore the environment to its pre-spill condition.[61]

In addition to charging the person who actually caused the spill, the EPA provides that a corporation shall be vicariously liable for the spills caused by its employees.[62]

Furthermore, directors and officers, under the EPA, have a duty to ensure that a discharge of a contaminant into the environment does not occur. This due diligence offence which the statute creates for officers and directors of a corporation has recently been upheld by the courts in Ontario as being constitutionally valid.[63] This duty in the EPA, which

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54 *See* CEPA, S.C., ch. 22, § 36 (1988) (Can.), *as amended*; EPA, R.S.O., ch. E.19, § 13 (1990) (Ont.), *as amended*.

55 *See* S.C., ch. 22, § 100 (1988) (Can.), *as amended*; EPA, R.S.O., ch. E.19, § 156 (1990) (Ont.), *as amended*.

56 *See* CEPA, S.C., ch. 22, § 101 (1988) Can.), *as amended*; EPA, R.S.O., E.19, § 158 (1990) (Ont.), *as amended*.

57 EPA, R.S.O., E.19, §§ 186(5), 185(6) (1990) (Ont.), *as amended*.

58 *Id.* at § 187(2).

59 *Id.* at § 187(1).

60 *Id.* at § 99.

61 *Id.* at § 190.

62 *Id.* at § 192.

63 R. v. Bata Industries Limited, unreported (Feb. 7, 1992) (Prov. Div. Ont.).

arises even if there has not been a prosecution against the corporation, is unlike the offence in CEPA, which requires the corporation to be found guilty of an offence in order for the directors and officers of the corporation to be found guilty.[64]

The standard of care that has to met by directors and officers of a corporation likely includes the following:

- the initiation of a pollution prevention system;
- ensuring that the system set up is sufficient to ensure compliance with the environmental laws and the industry standards; and
- personally acting when they have notice that the pollution prevention system has failed.[65]

A. Transactions

In addition to persons, corporations, directors and officers, the environmental laws of Ontario may also apply to financial institutions, receivers and others who take or have an interest as an owner of the property on which a spill occurs.[66] If a financial institution had, at some time in the past, taken the property as a result of the default on a mortgage, the financial institution is a past owner and can be made to pay for the clean up of the site. Furthermore, the customer of the financial institution may become bankrupt as a result of the spill, and the banks security in the property would be greatly diminished.

1. Lender's Liability

It is unknown whether Canada will follow in the footsteps of the United States and create an exemption for financial institutions. Even if the government does not step in, there will undoubtedly be an increase in the number of civil law suits to enforce "environmental warranties" given to financial institutions as a condition for the loan. There will also be an increase in environmental inspections of property before it is purchased.

2. Environmental Bill of Rights

The province of Ontario is currently considering an Environmental Bill of Rights. The main purpose of this legislation will be to grant status to interest groups to prosecute for environmental offenses. This may result in more prosecutions and more class actions against the producers of harmful substances if such substances are released into the environment.

3. Class Actions

Class actions are representative proceedings in which one or more

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64 EPA, R.S.O., E.19, § 194 (1990) (Ont.), *as amended.*

65 R. v. Bata Industries Limited, unreported (Feb. 7, 1992) (Prov. Div. Ont.).

66 EPA, R.S.O., E.19, §§ 43, 97 (1990) (Ont.), *as amended.*

groups which have the same interest in the litigation bring or defend an action for the benefit of the entire group. The significance of class actions in environmental law are that they allow individuals who are similarly aggrieved to commence an action as a group against the alleged wrongdoer, such as a polluter. Class actions reduce the need for numerous individual actions and, therefore, make small claims or claims with numerous plaintiffs more economically feasible. In addition, class actions force polluters to deal collectively as opposed to individually with plaintiffs.

While Quebec has enacted a class action statute[67], the current law in most provinces allows class actions only if the litigants have the "same interest". The courts have interpreted the phrase "same interest" very narrowly.

In Ontario, a new class proceeding legislation is expected to receive Royal Assent by May 1992. Under Ontario's new Class Proceeding Act 1992[68], members of a class will have to show that they have similar claims or defenses, but will not be required to prove that they possess the "same interest". The Class Proceeding Act also gives the Courts greater discretion in determining whether a group of potential plaintiffs or defendants represents an "identifiable class" unable to put forward or defend a class action.

Class action legislation which removes cost barriers and legal barriers for potential groups of litigants will undoubtedly be followed in other Canadian provinces during the 1990s.

VI. SUSTAINABLE DEVELOPMENT

Sustainable development is a concept defined by the World Commission on the Environment and Development (the "Brundtland Commission") as "development that meets the ends of the present without compromising the ability of future generations to meet their own needs".[69] The concept of sustainable development centers on the need to incorporate environmental considerations into the decision making process at all levels. Economic incentives for achieving this goal will be considered in the next section of this paper.

The Canadian response to the Brundtland Commission was a National Task Force on the Environment and the Economy. As a result of recommendations made by this National Task Force, round tables on the environment and the economy have been set up at the federal level and in most provinces. Participants in these round tables include representatives from government and industry and members of the public. While it may be premature to comment on the success of these round tables, it is

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[67] An Act Respecting the Class Action, R.S.Q., ch. R-2.1 (1978) (Que.).

[68] Bill 28, 35th Legislature, 2d Sess. (1991) (Ont.).

[69] THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE (1987).

hoped that their lack of formal status within the legislative process will not inhibit governments from implementing effective recommendations made by these round tables.

Sustainable development in Canada for the forestry, fisheries and agricultural sectors of the economy is discussed in the ensuing subsections.

A. Forestry

In Ontario, a three year class environmental assessment hearing on timber management is currently underway in Thunder Bay, Ontario.[70] This hearing should provide recommendations to the forestry industry with respect to the sustainability of its forestry practices.

Internationally, Canada and the United States signed a memorandum of understanding with respect to forest research and management initiatives in 1990.[71] This memorandum commits each country to information sharing and sets up some joint forestry projects between the two countries.

Domestically, the federal minister of the Department of Forestries announced the establishment of Partners in Sustainable Development of Forest Programs in October 1991. This program is intended to establish large scale working models of sustainable forestry in each of the major forest regions of Canada and commits funds to several specific research initiatives, such as setting up a seed and gene bank to conserve seed samples of Canadian tree species and studying more environmentally friendly forest management practices.[72]

As discussed earlier, federal regulations have recently been passed under the Fisheries Act and under CEPA to tighten effluent discharges from pulp and paper mills.

Currently, eighty-nine percent of all timber cut in Ontario is clear cut, resulting in the destruction of complex forest ecosystems.[73] During the 1990s, forestry practices such as clear cutting and aerial spraying will probably be dealt with by the provincial governments. The public accountability of forest companies for their timber practices will probably be strengthened to increase public scrutiny and awareness, and thereby bring the power of public opinion to bear on these practices.

In Ontario, forest companies are required to pay a stumpage fee to the provincial government as a royalty for trees cut down on Crown land. Whether these stumpage fees amount to an unfair subsidy under the Canada-U.S. Free Trade Agreement is currently in dispute. Environ-

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[70] CLIFFORD MAYNES, *Forestry, in* SUSTAINABILITY AS IF WE MEAN IT: AN ACTION AGENDA PREPARED BY ONTARIO'S CITIZENS GROUP AND ENVIRONMENTAL ORGANIZATIONS, *supra* note 21, at 42.

[71] CANADIAN ENVIRONMENTAL CONTROL NEWSLETTER, *supra* note 3, at 3432.

[72] *Id.* at 3689.

[73] MAYNES, *supra* note 70, at 42.

mentally, the question of whether these stumpage fees reflect the real cost of sustainable forestry is an issue which will have to be addressed in Ontario in the 1990s.[74]

Finally, given the destruction of forests around the world, greater international discussion and agreement on the sustainable development and conservation of the world's forest is required.

B. Fisheries

The previous discussion on the Great Lakes and protecting our oceans is directly applicable to the sustainability of our fisheries resource.[75] The importance of sustainable development in the fisheries industry to the Canadian economy is indicated by the 130,000 commercial fisherman and fish plant jobs provided by Canada's commercial fishery industry as well as by the current problem of reduced cod stocks in the waters of the North Atlantic.

In Canada, the federal government has entered into agreements with several provinces to allow them to assume responsibility for managing the fresh water fisheries in those provinces on behalf of all Canadians.[76]

The federal Fisheries Act[77] regulates inland and sea coast fisheries in Canada. Section 36(3) of this Act prohibits any person from depositing or permitting the deposit of a deleterious substance of any type in water frequented by fish.[78] The term "fish" is broadly defined by the Act to include shellfish, crustaceans, marine animals and the eggs, spawn, spat and juvenile stages of fish, shellfish, crustaceans, and marine animals. The Fisheries Act also creates a civil cause of action for all loss of income incurred by licensed special fishermen caused by the deposit of a deleterious substance.

The Green Plan calls for the development of the National Sustainable Fisheries Policy and Action Plan by the year 1992. This Action Plan is intended to establish a framework to achieve sustainable fisheries in Canada. This will undoubtedly require an understanding of fish stocks and their depletions, water quality, effects of overfishing and the effect of fish quotas.

The Green Plan also calls for increased fines under the Fisheries Act for those persons who pollute fish bearing waters. Internationally, Canada has called for a moratorium on all large scale driftnet fishing by June 30, 1992. This moratorium is called for because of the problems that these large driftnets pose for other marine animals such as dolphins.

Improved habitat protection, which may involve the delegation of

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[74] *Id.* at 42.

[75] *Id.* at 9.

[76] CANADA'S GREEN PLAN, *supra* note 7, at 73.

[77] R.S.C., ch. F-14 (1985) (Can.).

[78] *Id.* at § 34(1).

federal responsibility for fisheries to some provinces, must also be examined in the 1990s.

Finally, as with most if not all environmental issues in the 1990s, international efforts will be needed to bring an end to overfishing in Canada's coastal waters. International agreements are also required to deal with the problem of drift net fishing, to promote alternative fishing methods and to regulate ocean pollution.

C. Agriculture

The Federal-Provincial Agricultural Committee on Environmental Sustainability concluded that the long term survival and competitiveness of Canada's agricultural industry was dependent on Canada's ability to develop environmentally sustainable practices.[79] Environmental issues such as soil degradation, pesticide use, agricultural run-off and land use planning are all issues to be considered in setting up a plan to achieve agricultural environmental sustainability. In Canada, numerous provincial and federal initiatives aimed at soil and water conservation are currently in place.[80]

An example of provincial-federal cooperation on the issue of soil conservation is the agreement signed by the federal and Ontario Governments in April 1990.[81] This agreement sets up a permanent land cover program which pays farmers to take land susceptible to soil erosion out of use for a fixed number of years. The program also provides funds for soil quality research and for education programs relating to soil conservation.

Federal and provincial legislation regulates pesticides in Canada. The federal Pest Control Products Act[82] sets up a registration system for pesticides to be used in Canada, and pesticide use is regulated at the provincial level. In Ontario, the Pesticides Act[83] contains a general prohibition against discharging a pesticide that causes or is likely to cause certain adverse effects greater than those that would necessarily result from the proper use of the pesticide. The licensing of extermination businesses, exterminators, vendors and other pesticide handlers is also required under the Act.

The Green Plan calls for the formation of a new Canadian Agri-Food Advisory Council for Environmental Sustainability. Aspects of sustainable development for agriculture, such as minimizing agricultural waste through composting and recycling and research aimed at water

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79 CANADA'S GREEN PLAN, *supra* note 7, at 68.

80 The National Soil Conservation Program and Ontario's Soil and Water Environmental Enhancement Program are examples.

81 CANADIAN ENVIRONMENTAL CONTROL NEWSLETTER, *supra* note 3, at 3407.

82 R.S.C., ch. P-9 (1985) (Can.), *as amended*.

83 R.S.O., ch. 376 (1980) (Ont.), *as amended*.

quality improvement, have also been committed to by the federal government and hopefully will be fulfilled.

In the 1990s, research directed at sustainable development must be continued at all levels of government. Initiatives aimed at reducing the use of pesticides must be examined in an effort to move towards more environmentally friendly agricultural practices. Finally, if sustainable agricultural techniques result in lower average yields than conventional farming methods, government funded incentives may be needed to encourage farmers to implement sustainable agricultural practices.[84]

VII. ECONOMIC INCENTIVES AND "ENVIRONMENTALLY RESPONSIBLE" DECISION MAKING

The federal and some provincial governments have announced intentions to consider alternatives to the current regulatory "command and control" structure. Both levels of government have concluded that it may be easier to train businesses to become good environmental citizens by rewarding them for good decisions instead of punishing them for bad decisions. The federal and provincial governments currently provide incentives for environmental decision making by the use of grants and by the using fear of a potential penalty.

Consumer and Corporate Affairs Canada, the department of the federal government which is in charge of labelling and packaging, currently regulates claims made by manufacturer's through the Consumer Packaging and Labelling Act[85] and the Competition Act[86], both of which contain broad prohibitions against false and misleading representations.

Currently, environmental packaging is on a voluntary basis. The Canadian Council of Ministers of the Environment commissioned a national task force to develop a policy on packaging standards in consultation with business. The task force produced the current National Packaging Protocol, which has six policies for business:

- all packaging shall have a minimum effect on the environment;
- priority will be given too reducing, reusing and recycling packaging at the manufacturing source;
- a continuing information campaign will be undertaken to ensure that the public is aware of the impacts of packaging;
- the policies will apply to all products, including imported products;
- regulations will be implemented if necessary to achieve compliance; and

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[84] CLIFFORD MAYNES, *Agriculture, in* SUSTAINABILITY AS IF WE MEAN IT: AN ACTION AGENDA PREPARED BY ONTARIO'S CITIZENS GROUP AND ENVIRONMENTAL ORGANIZATIONS, *supra* note 21, at 33.

[85] S.C., ch. 41 (1970-1971-1972).

[86] R.S.C., ch. C-34 (1985) (Can.).

- all government policies and practices will be consistent with these policies.

The federal government has also taken steps to advise the public of environmentally satisfactory products with the Environmental Choice Program. Products which are approved by the Environmental Choice Board, a federally appointed body, having scored highest on the criteria established by the Board, are given permission to use the EcoLogo symbol. Currently, fifteen categories of products have been granted use of the EcoLogo symbol: re-refined oil; insulation from wood-based cellulose fiber; products made from recycled plastic; zinc-air batteries; water-based paint; fine paper from recycled paper; newsprint from recycled paper; heat recovery ventilators; reusable cloth diapers; solvent-based paint; ethanol-blended gasoline; composters for residential use; reusable shopping bags; and diaper services.

Environmental Choice criteria have also been established for the following products: laundry detergents; dishwasher detergents; hand dishwashing detergents; sanitary paper from recycled paper; energy efficient major appliances; compost; rechargeable batteries; energy-efficient lamps; and water conserving products.

A. Environmental Compensation Payments

One method of creating an economic incentive to become environmentally responsible is to create a system in which all businesses pay into a common fund, which is then used to restore the environment when a spill occurs. Businesses which do not spill pay less than businesses which do spill. This causes businesses to work at having no spills in order to keep their costs as low as their competition.

B. Effluent Charges

The provincial government is examining whether to create a pay as you pollute system for sewage. Business would pay a charge per unit of contaminant discharged. The business which pays fewer charges, therefore, would be more competitive than a higher discharging business.

C. An Emission Trading System

The federal government has recently announced its intention to study an emission trading program. The program would require the issuance of permits that enable businesses to produce a certain level of pollution. These permits will be freely transferable, and a business could sell its permits to another business. A business which does not have the necessary permits will be prosecuted for polluting without a permit. The federal government plans on having such a trading scheme in operation by 1994.

D. Manufacturer's "Green" Taxes

In order to ensure that such programs as environmental choice become more effective, the provincial government in Ontario is considering a manufacturer's tax which penalizes the production of environmentally unsafe products. The purpose of the tax would be to ensure that environmentally unsafe products are not a less expensive alternative to environmentally safe products.

E. National Packaging Regulations

National packaging regulations will probably be promulgated. The government has announced concerns regarding both the amount of packaging and the proper use of environmental claims. Regulations pursuant to the Consumer Packaging and Labelling Act will stipulate what may be said. Regulations pursuant to the Competition Act will be in force to ensure that misleading claims of environmental suitability are prosecuted.

SCHEDULE 1

Canadian Federal Legislation

1. Fisheries Act, R.S.C., ch. F-14 (1985).
2. Canada Shipping Act, R.S.C., ch. S-9 (1985).
3. Canada Water Act, R.S.C., ch. C-11 (1985).
4. Arctic Waters Pollution Prevention Act, R.S.C., ch. A-12 (1985).
5. Northern Inland Waters Act, R.S.C., ch. N-25 (1985).
6. International Boundary Waters Treaty Act, R.S.C., ch. I-17 (1985).
7. Navigable Waters Protection Act, R.S.C., ch. N-22 (1985).
8. Pilotage Act, R.S.C., ch. P-14 (1985).
9. Ocean Dumping Control Act, R.S.C., ch. O-2 (1985).
10. Canada Ports Corporation Act, R.S.C., ch. C-9 (1985).
11. Migratory Birds Convention Act, R.S.C., ch. M-7 (1985).
12. Animal Disease and Protection Act, R.S.C., ch. A-11 (1985).

Ontario Legislation

1. Conservation Authorities Act, R.S.O., ch. C.27 (1990).
2. Environmental Protection Act, R.S.O., ch. E.19 (1990).
3. Lakes and Rivers Improvement Act, R.S.O., ch. L.3 (1990).
4. Mining Act, R.S.O., ch. M.14 (1990).
5. Ontario Waste Management Corporation Act, R.S.O., ch. O.39 (1990).
6. Ontario Water Resources Act, R.S.O., ch. O.40 (1990).
7. Pesticides Act, R.S.O., ch. P.11 (1990).
8. Transboundary Pollution Reciprocal Access Act, R.S.O., ch. T.18 (1990).